

AMENDMENT(S) TO THE SPECIFICATION

Please replace the paragraph beginning at page 1, line 24, with the following rewritten paragraph:

Double-cone device 100 ~~consists of~~ comprises two coaxial frustroconical sections, referred to as entry cone 102 and exit cone 104, held together by a cylindrical tube 110. Entry cone 102 is characterised by its length L_1 , larger diameter D_1 , -smaller diameter d_1 , and conical angle q_1 . Similarly, exit cone 104 is characterised by its length L_2 , larger diameter D_2 , -smaller diameter d_2 and conical angle q_2 . The region of minimum diameter between the two sections is referred to as orifice 106. Double-cone device 100 is fed with a feed flow 112 that enters entry cone 102 and discharges out through exit cone 104. The feed flow can be any fluid i.e. either liquid or gas.

Please replace the paragraph beginning at page 2, line 6, with the following rewritten paragraph:

Cylindrical connecting tube 110 surrounds the area around the orifice. An inlet 108 on cylindrical connecting tube 110 allows suction of fluid 114 from outside device 100 to be drawn into orifice 106.

Please replace the paragraph beginning at page 2, line 23, with the following rewritten paragraph:

Behaviour of the feed flow or the pressure variation within the device is a function of various factors including geometrical parameters such as the conical angles of the entry and exit cones, external pressures at the inlet of the entry cone and the outlet of the exit cone. Specifically, the higher the external pressure lower the pressure at the orifice. This results in a higher suction force at the orifice.

Please replace the paragraph beginning at page 9, line 5, with the following rewritten paragraph:

Size of holes 306 is a function of feed flow material 310 and the size of orifice 308. The nature of the material 312 that is to be sucked affects the size of the holes substantially. For example, if water is the material to be sucked, then the diameter of holes relative to the orifice diameter should be less than 0.5 and in absolute terms limited to <10 mm. If a non-Newtonian fluid is used, then the maximum diameter of the hole is limited to 4-5 mm. Further, for a non-Newtonian liquid, size of the hole is strongly dependent on the liquid's mechanical properties. In the preferred embodiment, the size of the holes < 0.2 times the orifice diameter is preferred. Small hole to orifice size ratio is preferred because if the ratio is too high then the stability of flow feed is adversely affected.

Please replace the paragraph beginning at page 10, line 1, with the following rewritten paragraph:

FIG.4 shows a double-cone device 400 comprising entry cone 302, exit cone 304, and a porous section 402. The geometry of the device is continuous and entry cone 302 and exit cone 304 are made of first material, which can be the standard material used for making double-cone devices, such as steel. Porous section 402 is made of a porous material such as ceramic or glass compounds. Porous concrete compounds are ideal for use in large double-cone devices. Other examples can be the creation of a porous section by chemical leaching of suitable materials. For instance, compounds composed of various alloys and plastics can be used to form the geometry and the porous section is then formed by subjecting the appropriate region to chemical or electrical attack. Feed flow 310 flows through device 400 moving from the inlet of entry cone 302 and discharging into the outlet of exit cone 304. The discharge includes feed flow 310 as well as sucked material 404. Material 404 is sucked into device 400 through porous section 402.

Please replace the paragraph beginning at page 11, line 17, with the following rewritten paragraph:

Continuous geometry also leads to an increase in the pressure amplification as compared to the existing double-cone devices. The pressure amplification that can be achieved is a function of the flow regime within the double-cone. Specifically, the pressure amplification is a function of the axial flow velocity component. ~~More~~ The more dominant the axial flow velocity component, the greater is the amplification that can be achieved. The continuous geometry reduces the tendency for the non-axial flow velocity components to increase in magnitude resulting in the increase in pressure amplification.

Please replace the paragraph beginning at page 12, line 27, with the following rewritten paragraph:

The use of holes, as opposed to sliced sections removed from the exit cone in the existing double-cone devices, leads to an enhanced suction pressure downstream of the orifice 308. The suction force depends on the pressure that is generated in the neighbourhood of the orifice 308. The pressure in this region is a function of various parameters. The parameters include geometry of double-cone device 300, pressure applied at the outlet of exit cone 304 and the position of inlets to suck the material into device 300. Specifically, if the inlet for sucking the material is closer to the orifice, the suction force is higher. This is because the suction force depends on the pressure existing in orifice 308. ~~Lower~~ The lower the pressure in orifice 308, the higher is the suction force. The pressure rises dramatically with distance from the orifice 308. Hence, to maximise the suction force, the suction inlet should be as close to orifice 308 as possible. The present invention utilises this fact to achieve higher suction by using a plurality of holes 306 near the orifice.